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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,025	02/16/2001	Tomohiro Ishihara	50395-084	2652

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EXAMINER

HOFFMANN, JOHN M

ART UNIT PAPER NUMBER

1731

6

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/763,025

Applicant(s)

ISHIHARA ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION***Election/Restrictions***

Applicant's election of group I in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim 8 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Claim Objections

Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 3 requires that the first heating step has a degassing step (1000-1300 C) and a thermal shrinking step (1300 -1400 C). Since they have substantially non-overlapping temperature ranges, these two steps cannot be simultaneous. However, Claim 1, requires that the gas be removed "while effecting the thermal shrinkage" (line 6). Thus claim 1 requires that the two things are simultaneous and claim 3 requires they are not simultaneous: these claims are mutually exclusive. One cannot meet the limitations of claim 3 and claim 1 in the same process; they are of completely different scope. Therefore claim 3 cannot depend from claim 1.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "thermal shrinkage", "vitrification" and "vitrify" are indefinite as to their meaning. First, it is noted that there is no definition provided in the specification. Second, from page 2, lines 17-20 and the specification as a whole suggests to one of ordinary skill the preform is made of glass prior to the vitrification step. However, since glass is already vitreous, it is impossible to vitrify it. Vitrification is causing something to become glass or glass like. Applicant is reminded that if an alternative definition for a term is to be used, that definition must be clearly set forth in the specification. There is no such definition to be found. As to thermal shrinkage, there is no indication of what that is. (see below for more discussion)

Lines 3-4 does not indicate what is being heated "to a temperature" the rules of English would suggest it is the furnace - but the specification suggests it is the preform. Then on line 4, it is stated that the vitrification temperature is "in a vacuum" - however, this does not make much sense; and from claim 3, line 2, the use of the term "the gas" suggests that "the gas" is part of the claimed method of claim 1. In other words, claim 3 suggests that the heating of occurs in the vacuum (although it is still unclear if the

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furnace itself must be in the vacuum, or if the preform must be in the vacuum).

However, this interpretation does not make sense because then that requires that the claim 1, line 3 heating step removes gas "while effecting thermal shrinkage". To one of ordinary skill (at first look) this thermal shrinkage is due to sintering of the soot body.

However line 4 of claim 1 requires that the temperature must be lower than the vitrification temperature (i.e. which examiner interprets to be the sintering temperature).

The question remains: how can one sinter glass at a temperature that is less than the sintering temperature? OR (in the language of the specification), how can one thermally shrink glass at a temperature that is less than the vitrification temperature?

IT is noted that this question is based on the assumption that the "thermal shrinkage" is sintering. And if it is not sintering, one of ordinary skill would not be able to understand what is meant by "thermal shrinkage" because there is no explanation what it is, or how to determine if it has occurs. It is well known that almost all materials expand when they are heated - they don't shrink - unless there is sintering or some phase transformation.

Allowable Subject Matter

The claims are not rejected over prior art, because the prior art does not disclose degassing "while" shrinking a preform at temperature lower than a "vitrification" (or sintering) temperature.

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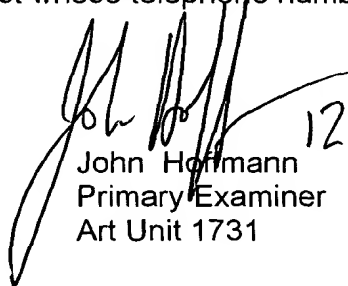
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takita, Ishikawa (2), Edahiro, Crossland, DeLuca, Dabby, Brown, Sarkar, Johnson and Loxley are cited as being of general interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is 703-308-0469. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7115 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


John Hoffmann
Primary Examiner
Art Unit 1731

12-12-02